Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended): A method of network management comprising:

providing a central controller for controlling network access of ~~at least one~~ a first -access point ~~and~~ having a respective first plurality of associated clients and a second access point having a second plurality of associated clients;

~~monitoring a plurality of network parameters that influence performance between the clients and the network;~~

~~regulating access of the plurality of clients to the network so as to vary at least one of the plurality of network parameters, to influence performance~~

determining a first client selected from the first plurality of associated clients and a second client selected from the second plurality of associated clients that can use a channel concurrently; and

scheduling a time slot with the first access point for the first client and with the second access point for the second client;

wherein the first client and second client use the same time slot and same channel concurrently .

2. (Currently Amended): The method of claim 1, further comprising:

monitoring a plurality of network parameters that influence parameters between the first plurality of clients and the first access point and the second plurality of clients and the second access point; and

wherein the step of monitoring network parameters comprises monitoring ~~at least~~ one of[[:]]the group consisting of time division, buffering, bandwidth, frequency, space and throughput.

Claims 3-6 . (Canceled):

7. (Currently Amended): The method of claim [[6]]1, further comprising:

~~wherein the step of maximizing throughput comprises the step of~~ monitoring network packet collision history; and

adjusting client access to specific time slots based on the packet collision history.

8. (Currently Amended): The method of claim [[7]]1, further comprising:

~~wherein the step of maximizing network throughput comprises the step of~~ managing space by controlling the direction of at least one adaptive antenna array to ~~avoid~~allow simultaneous access between potentially interfering clients.

9. (Currently Amended): The method of claim 8 wherein the step of managing space comprises the step of simultaneously managing time by selecting client time division multiple accesses on ~~each~~ the first and second access points to ~~avoid~~allow simultaneous access between potentially interfering clients.

10. (Currently Amended): The method of claim [[6]]1, further comprising:

~~wherein the step of maximizing throughput comprises the step of~~ monitoring packet angle-of-arrival information to determine ~~access~~ a location ~~of particular~~ for the first plurality of clients and the second plurailty of clients;

controlling the direction of an adaptive antenna array associated with one of the group consisting of the first access point and the second access point to allow simultaneous access between the first client and the second client based on their respective location determined during the monitoring packet angle of arrival information;

wherein the controlling the direction uses one of the group consisting of adaptive beam forming and adaptive null forming to compute an orthogonal antenna array pattern.

Claims 11 - 16. (Canceled):

17. (Currently Amended): The method of claim 1 further comprising a network calibration routine comprising the following steps:

instructing ~~a particular~~the first access point to transmit a signal in a desired direction;

detecting the signal using the ~~respective other~~second access point[[s]];

reporting to a main controller received signal strength and direction of arrival detected by the ~~respective other~~second access point[[s]];

~~repeating the above steps for each of the respective other access points;~~

~~using the main controller to~~determin[[e]]ing a network access topology to reduce multipath interference between the first plurality of clients and the second plurality of clients.

18. (Canceled):

19. (Currently Amended): A network apparatus comprising a network management system for managing network ~~across of~~comprising ~~at least one~~a first access point having a respective first plurality of associated clients and a second access point having a second plurality of associated cleints, the management system comprising:

a machine-implemented algorithm for monitoring a plurality of performance-related network parameters between the first plurality of clients, the second plurality of clients and the network, and outputting instructions for varying at least one of the network parameters;

wherein the machine implemented algorithm is responsive to monitoring the plurality of performance-related network parameters to determine a first client selected from the first plurality of associated and a second client selected from the second plurality of associated client that can use a channel concurrently;

a processor for regulating access of the first plurality of clients and second plurality of clients according to the algorithm's outputted instructions, ~~to regulate access of the plurality of clients in order to influence network performance~~schedule a time slot with the first access point for the first client and the second access point for the second client;

wherein the first client and second client use the same time slot and same channel concurrently.

20. (Currently Amended): The network apparatus of claim 19 ~~wherein the at least one access point comprises a plurality of access points and~~ wherein the management system ~~comprises at least one of the plurality of access points, designated to manage at least a portion of the plurality of~~is co-located with one of the group consisting of the first access point and the second access point.

21. (Original): The network apparatus of claim 19 wherein the management system comprises an enhanced ethernet switch.

22. (Currently Amended): The network apparatus of claim 21 wherein the enhanced ethernet switch comprises:

a high speed network ethernet media access controller for interfacing with a network;

a respective plurality of access point [[AP]] ethernet media access controllers for sending and receiving data from the respective access points;

wherein the processor is a dedicated processor for implementing the algorithm and regulating data flow between the network and the respective access points.

23. (Original): The network apparatus of claim 21 wherein the enhanced ethernet switch operates Reservation Protocol and subnet band width management, and is 801.1P and 801.1Q compliant.

24. (Currently Amended): The network apparatus of claim [[10]]19 wherein the algorithm can be implemented by at least one of an associative neutral net, a root near square error program, and an artificial intelligence scheme.

25. (Currently Amended): The network apparatus of claim 24 comprises an algorithm-responsive antenna control for varying position of at least one ~~adoptive~~ adaptive directional antenna associated with one of the group consisting of the first access point and the second access point, to alternately select clients from one of the group consisting of the first plurality clients and second plurality of clients for varying at least one network parameter.

26. (Currently Amended): An apparatus for network management comprising:

means for centrally controlling network access of ~~at least one~~a first access point ~~and~~ having a respective first plurality of associated clients and a second access point having a respective second plurality of associated clients;

means for monitoring a plurality of network parameters that influence performance between the first plurality of clients, the second plurality of clients and the network;

~~means for regulating access of the plurality of clients to the network so as to vary at least one of the plurality of network parameters, to influence performance~~

means for determining a first client selected from the first plurality of associated clients and a second cleint from the second plurality of associated clients that use a channel concurrently; and

means for scheduling a time slot with the first access point for the first client and with the second access point for the second client;

wherein the first client and second client use the same time slot and same channel concurrently.

27. (Currently Amended): The apparatus of claim 26 wherein the means for monitoring network parameters comprises means for monitoring ~~at least~~ one of the group consisting of : time division, buffering, bandwidth, frequency, space and throughput.

Claims 28 - 31. (Canceled):

32. (Currently Amended): The apparatus of claim [[31]]26, further comprising:

~~wherein the means for maximizing throughput comprises~~ means for monitoring network packet collision history; and

means for adjusting client access to specific time slots responsive to the means for monitoring network packet collision history.

33. (Currently Amended): The apparatus of claim 32 wherein ~~the means for maximizing network throughput~~ one of the group consisting of the first access point and the second access point comprises means for managing space by controlling the direction of at least one adaptive antenna array to ~~avoid~~allow simultaneous access between potentially interfering clients.

34. (Currently Amended): The apparatus of claim 33 wherein the means for managing space comprises means for simultaneously managing time by selecting client time division multiple accesses on ~~each~~ one of the group consisting of the first access point and second access point to ~~avoid~~allow simultaneous access between potentially interfering clients.

35. (Currently Amended): The apparatus of claim [[31]]26, further comprising ~~wherein the means for maximizing throughput comprises~~ means for monitoring packet angle-of-arrival information to determine ~~access~~ a location of particular clients.

36. (Currently Amended): The apparatus of claim 35 wherein ~~the means for maximizing the throughput~~one of the group consisting of the first access point and the second access point comprises means for managing space by controlling the direction of at least one adaptive antenna array to ~~avoid~~ allow simultaneous access between interfering clients.

37. (Currently Amended): The apparatus of claim 36 wherein the means for ~~maximizing throughput~~managing space further comprises means for one of the group consisting of beam forming [[/]] and null forming to compute [[o]]an orthogonal antenna array pattern.

Claims 38 - 41. (Canceled):

42. (Original): The apparatus of claim 26 further comprising a network calibration routine comprising:

means for instructing a particular access point to transmit a signal in a desired direction;

means for detecting the signal using the respective other access points;

means for reporting to a main controller received signal strength and direction of arrival detected by the respective other access points;

means for repeating the network calibration routine for each of the respective other access points;

means for using the main controller to determine a network access topology to reduce multipath interference between clients.

43. (Original): The apparatus of claim 32 further comprising means for performing the network calibration routine for each of the respective plurality of clients.

44. (Currently Amended): A computer ~~usable~~ readable medium having computer ~~readable~~ executable program code embodied therein for causing management of a network, the computer ~~readable~~ executable program code into a computer program product comprising:

instructions for centrally controlling network access of ~~at least one~~a first access point ~~and~~ having a respective first plurality of associated clients and a second access point having a respective second plurality of associated clients;

instructions for monitoring a plurality of network parameters that influence performance between the first plurality of clients, the second plurality of cleints and the network;

~~instructions for regulating access of the plurality of clients to the network so as to vary at least one of the plurality of network parameters, to influence performance~~

instructions for determining a first client selected from the first plurality of associated clients and a second cleint from the second plurality of associated clients that use a channel concurrently; and

instructions for scheduling a time slot with the first access point for the first client and with the second access point for the second client;

wherein the first client and second client use the same time slot and same channel concurrently.

45. (Currently Amended): The computer program product of claim 44 wherein the instructions for monitoring network parameters comprises instructions for monitoring ~~at least~~ one of the group consisting of: time division, buffering, bandwidth, frequency, space and throughput.

Claims 46 - 49. (Canceled)

50. (Currently Amended): The computer program product of claim [[49]]44, further comprising:

~~wherein the instructions for maximizing throughput comprises~~ instructions for monitoring network packet collision history; and

instructions for adjusting client access to specific time slots.

51. (Currently Amended): The computer program product of claim 50, further comprising ~~wherein the instructions for maximizing network throughput comprises~~ instructions for managing space by controlling the direction of at least one adaptive antenna array coupled to one of the group consisting of the first access point and the second access point to ~~avoid~~ allow simultaneous access between potentially interfering clients.

52. (Currently Amended): The computer program product of claim 51, further comprising ~~wherein the instructions for managing space comprises~~ instructions for simultaneously managing time and space by selecting client time division multiple accesses on each access point to ~~avoid~~allow simultaneous access between potentially interfering clients.

53. (Currently Amended): The computer program product of claim [[49]], further comprising ~~wherein the instructions for maximizing throughput comprises~~ instructions for monitoring packet angle-of-arrival information to determine ~~access~~ location of particular clients.

54. (Currently Amended): The computer program product of claim 53, further comprising ~~wherein the instructions for maximizing the throughput comprises~~ instructions for

managing space by controlling the direction of at least one adaptive antenna array to ~~avoid~~allow simultaneous access between interfering clients.

55. (Currently Amended): The computer program product of claim 54 wherein the instructions for maximizing throughput comprises instructions for using one of the group consisting of beam forming [[/]]and null forming to compute [[o]]an orthogonal antenna array pattern.

Claims 56 - 59. (Canceled):

60. (Original): The computer program product of claim 44 further comprising a network calibration routine comprising the following instructions:

instructions for instructing a particular access point to transmit a signal in a desired direction;

instructions for detecting the signal using the respective other access points;

instructions for reporting to a main controller received signal strength and direction of arrival detected by the respective other access points;

instructions for repeating the above instructions for each of the respective other access points;

instructions for using the main controller to determine a network access topology to reduce multipath interference between clients.

61. (Currently Amended): The computer program product of claim [[50]]60 further comprising instructions for performing the network calibration routine for each of the respective plurality of clients.

REMARKS/ARGUMENTS

Applicant would like to acknowledge, with thanks, the Office Action mailed November 28, 2005. This amendment is responsive to the Office Action mailed November 28, 2005.

By this amendment, claims 1, 2, 7-10, 17, 19-20 , 22, 24-27, 32-37, 44, 45, 50-55 and 61 have been amended and claims 3-6, 11-16, 18, 28-31, 38-41, 46-49 and 56-59 have been cancelled. Therefore, claims 1, 2, 7-10, 17, 19-27, 32-37, 42-45, 50-55 and 60-61 are now pending.

Claims 44-61 stand rejected under 35 U.S.C. § 101. Accordingly, claim 44 was amended as suggested by the examiner. Claims 45-61 that depend from claim 44, thus the amendment to claim 44 should correct the deficiency cited by the examiner. Withdrawal of this rejection is respectfully requested.

Claims 24 and 25 stand rejected under 35 U.S.C. § 112, 2nd paragraph. Accordingly, claim 24 was amended to depend from claim 19 which should correct the deficiency cited by the examiner. Claim 25 depends from claim 24 and the amendment to claim 24 should remedy claim 24 as well. Withdrawal of this rejection is respectfully requested.

PRIOR ART REJECTIONS

Claims 1-11, 13-23, 26-36, 38-54 and 56-61 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. 2003/0067903 to Jorgenson (herinafter Jorgenson). Claims 12, 37 and 55 stand rejected under 35 U.S.C. § 103 as being obvious based on Jorgenson and U.S. Patent No. 6,456,608 to Lomp (hereinafter Lomp). Withdrawal of these rejections is requested for reasons that will now be set forth.

Independent claims 1, 19, 26 and 44 recite a method (or apparatus or computer program product configured for implementing the method) for controlling network access of a first access point having a respective first plurality of associated clients and a second access point having a second plurality of associated clients. The method comprises determining a first client selected from the first plurality of clients and a second client selected from the second plurality of associated clients that can use a channel concurrently. A time slot is scheduled with the first access point for the first client and the second access point for the second client wherein the first client and second client use the same time slot and same channel concurrently. In other words, an aspect of the present invention is that it enables multiple access points operating on the same

channel to communicate with clients concurrently by determining which clients can be on the air at the same time.

By contrast, Jorgenson uses two schedulers at the wireless base station (paragraphs 398-399). The first scheduler for uplink frames & the other for downlink frames (*Id.*). The scheduler in Jorgenson analyzes packet headers to determine whether a packet belongs to a new or existing flow (paragraph 394). The scheduler then prioritizes by class (paragraph 395). Thus, Jorgenson does not disclose a method (or apparatus) coupled to a plurality of access points that determines which clients can concurrently communicate with the access points.

In addition to the reasons set forth above, claims 8-10, 33, 34, 36, 51, 52 and 54 recite controlling the direction of an adaptive array antenna associated with one of the group consisting of the first access point and second access point to allow simultaneous access between the first client and second client. This aspect allows clients associated with access points in close proximity to communicate with their respective access points at the same time. Nothing in Jorgenson discloses this.

In addition to the reasons set forth above, claims 7, 32 and 50 recite adjusting the time slots responsive to packet collision history. Jorgenson only discloses adjusting scheduling flows based on priority and does not adjust based on packet collision history.

The aforementioned deficiencies of Jorgenson are not remedied by any teaching of Lomp. The examiner relies on Lomp to teach using beam forming with an orthogonal antenna array, which does not remedy the aforementioned deficiencies of Jorgenson.